

Fortunately for the future, the Eruvikulam area is unsuitable for cattle- or sheep-ranching as the grass is very coarse and suitable fodder grasses cannot stand the 350-inch rainfall. Neither could any cattle. The area has also been surveyed for forestry and the soil found unsuitable for planting with wattle or other forest crop trees. Therefore it is probable that it will survive inviolate for those who wish to see it. As long as the H.R.G.P.A. maintains its present good control over poaching the Nilgiri Tahr will be there to delight the eye of naturalist, photographer, or genuine trophy hunter.

The Nilgiri Tahr differs from the Himalayan Tahr in not having a long shaggy coat and it does not occupy such inaccessible rocky ledges. When grazing the herds come out on to the open grass-covered slopes above the rocky faces. For this reason it is fairly easy to see them through binoculars and to photograph them with a telephoto lens.

LETHBRIDGE,
ALBERTA,
CANADA,

T. H. BASSETT

December 7, 1962.

2. TAXONOMIC STATUS OF *TADARIDA TRAGATA* (DOBSON) [CHIROPTERA : MOLOSSIDAE]¹

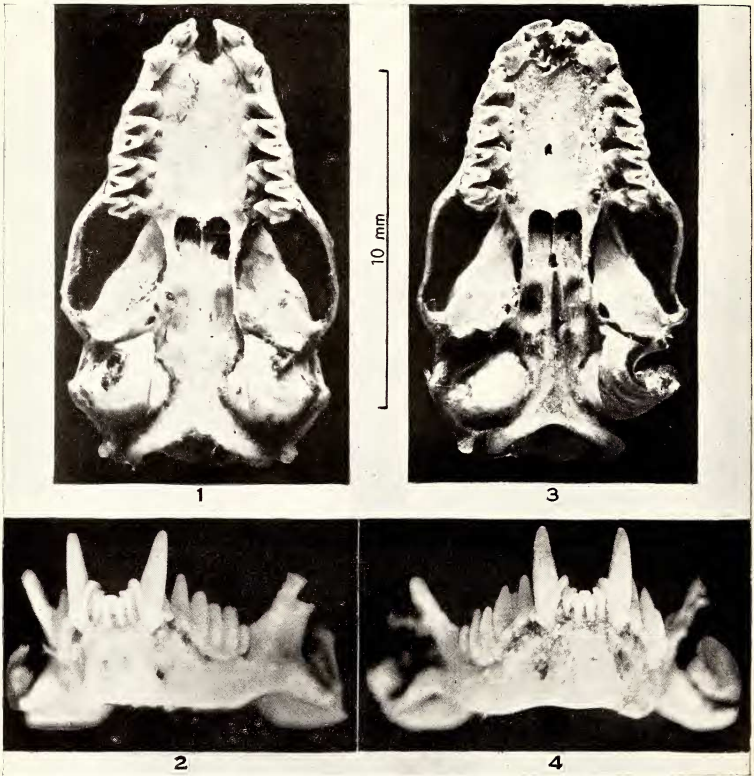
(With a plate)

INTRODUCTION

Based on a single specimen, previously identified by Blyth as *Nyctinomus plicatus*, Dobson (1874) described a new species of bat, *Nyctinomus tragatus*, which is now known as *Tadarida tragata* (Dobson). The chief distinguishing characters of *Tadarida tragata* as given by Dobson (1874, 1876) are the absence of the ear-joining band, which separates it from *Tadarida plicata*, and the presence of six lower incisors against four in *Tadarida aegyptiaca* Geoffroy.

Wroughton (1919) pointed out that the specimens of *Tadarida tragata* of the Mammal Survey Collection were found on re-examination to be very closely allied to *Tadarida aegyptiaca*. On these

¹ Communicated by Dr. Biswamoy Biswas, Indian Museum, Zoological Survey of India, Calcutta 13.



Tadarida tragata (Dobson) (holotype) and *Tadarida aegyptiaca* Geoff.

1. Ventral view of skull of *Tadarida tragata* (Dobson), showing anterior premolar (Pm²);
2. Front view of lower jaw of *Tadarida tragata* (Dobson), showing four incisors;
3. Ventral view of skull of *Tadarida aegyptiaca* Geoff., showing the anterior premolar (Pm²);
4. Front view of lower jaw of *Tadarida aegyptiaca* Geoff., showing incisors

specimens he established three new species, which are now considered as three subspecies of *Tadarida aegyptiaca* by Ellerman & Morrison-Scott (1951). Again, Phillips's (1932) specimens of *Tadarida tragata* have recently been found by Hill (1961) to be, in fact, *Tadarida aegyptiaca*. In the light of this information the status of *Tadarida tragata* appears rather confusing, and an attempt has been made here to study the species in detail.

MATERIAL AND METHOD

Very few specimens of *Tadarida tragata* are available in the collections of different museums of the world. I could get only four specimens (2 ♂♂ and 2 ♀♀), three (Reg. Nos. 15461, 15462, 15463) in the collection of the Zoological Survey of India and the fourth (Reg. No. 529) received through the courtesy of Prof. K. Zimmermann, Zoologisches Museum der Humboldt Universität, Berlin. The only specimen present in the British Museum was not available owing to its poor condition. All the four specimens have been critically examined and compared with allied species, specially *Tadarida aegyptiaca*, which they resemble very much. Special stress has been given to the characters which have taxonomic importance.

OBSERVATIONS

Ear-joining band

Dobson (1874) separated the species from *Tadarida plicata* on the basis of the absence of ear-joining band in *Tadarida tragata*. Later (1878), he noted a similar condition in *Tadarida aegyptiaca*: 'ears quite separate but close together by the bases of their inner margins'. Hill (1961) mentions that the ears in *Tadarida tragata* unite by the inner margins of their bases. The two similar conditions given above are for two allegedly different species. On examination, however, I found that actually there is no ear-joining band in either species; the ears unite by the inner margins of their bases.

Lower incisors

Dobson (1876) and other authors, apparently following him, have described six lower incisors in *Tadarida tragata* against four in *Tadarida aegyptiaca*. Dobson has stressed this character and separated

the species from *Tadarida aegyptiaca* mainly on this basis. It is interesting to note that Wroughton (1919) and Hill (1961) did not say anything about the number of lower incisors in the Mammal Survey and Phillips's specimens.¹ It is not clear how the Mammal Survey and Phillips's specimens were originally mistakenly thought to possess six lower incisors; they must have had only four as later on they were re-identified as *Tadarida aegyptiaca*. Similarly, the Berlin Museum specimen, which has only four lower incisors, was identified as *Tadarida tragata*. A careful examination of all the specimens, including the holotype (present in the Z.S.I. collection), revealed that they possess only four lower incisors and not six as claimed by Dobson (see Pl., Figs. 2 & 4).

Anterior upper premolar (Pm²)

Dobson (1874) did not describe the anterior upper premolar. Wroughton (1919) pointed out that in *Tadarida aegyptiaca*, representing the group with four lower incisors, the anterior premolar is reduced to a mere rudiment, and in the other group with six lower incisors (to which *Tadarida tragata* belongs) the anterior premolar though markedly reduced in size is yet a functional tooth. Hill (1961) also notes that in *Tadarida tragata* it is less reduced. In Wroughton's statement it is not certain if he was describing the condition in *Tadarida tragata*. An examination of the available specimens shows that the anterior premolar is reduced to more or less the same extent in both the species (see Pl., Figs. 1 & 3).

As far as the position of the premolar (Pm²) is concerned, it is similar in both the species, touching the canine cingulum. Moreover, difference of position cannot be considered as a character of specific value for it differs even in different subspecies of *Tadarida aegyptiaca* (Hill 1961).

Size

Dobson (1876) showed some size difference between the two species. According to Wroughton (1919) the measurements given by Dobson do not help much towards identification. Tables 1 and 2 show that there is no appreciable difference in cranial or external measurements where ranges of the two species overlap.

¹ At our request Mr. J. E. Hill of the British Museum examined the specimen from Malabar in their collection and reports that: 'It has six lower incisors, the inner pair displaced forwards and downwards'. (See also Hill 1961). However he adds: 'It is possible that specimens hitherto referred to *T. tragata* on the ground of the presence of six lower incisors are in fact aberrants of *T. aegyptiaca*, which has normally four: specimens of *T. teniotis* are occasionally encountered with four lower incisors instead of the normal six'.—EDS.

TABLE I

EXTERNAL MEASUREMENTS (in mm.)

Tadarida tragata (Dobson)

Reg. No.	Locality	Sex	HB	HF	T	TFM	E	FA	Remarks
15461	Calcutta, Bengal	♂	71	9	46	23	20	52	Type, Z.S.I. In spirit
15462	Jaishpur, near Chota Nagpur	♂	74	8	42	22	20	47	Z.S.I. In spirit
15463	Rajanpur, Punjab	♀	74	10	42	20	20	49	do.
529	..	♀	71	9	40	22	18	49	Berlin Museum. In spirit
<i>Tadarida aegyptiaca</i> Geoff.									
15464	Rajkot, Kathiawar	♂	70	8	45	20	19.5	47	Z.S.I. Dry skin.
15465	Mt. Abu, Rajasthan	♀	69	8	43	23	20	47	do.

Abbreviations : E, Ear ; FA, Forearm ; HB, Head and Body ; HF, Hindfoot ; T, Tail ; TFM, Tail free from membrane ; Z.S.I., Zoological Survey of India

TABLE 2

CRANIAL MEASUREMENTS (in mm.)

Tadarida tragata (Dobson)

Reg. No.	Locality	Sex	C-C	CB	ONL	PL	ZW	Bulla	Mandb.
15461	Calcutta, Bengal	♂	2.5	19.6	19.8	8.4	..	4.4	..
15462	Jaishpur, near Chota Nagpur	♂	2.5	19.1	19.3	8.2	11.7	4.5	13.5
15463	Rajanpur, Punjab	♀	2.5	19.2	20	8.5	12.5	4.4	14
<i>Tadarida aegyptiaca</i> Geoff.									
15464	Rajkot, Kathiawar	♂	2.5	18.7	19.2	8	11.7	4.2	13.6
15465	Mt. Abu, Rajasthan	♀	2.5	18.5	19	8	11.9	4.4	13.6

Abbreviations : Bulla, Tympanic bulla length ; C-C, Least distance between roots of upper canines ; CB, Condylbasal length ; Mandb., Mandibular length ; ONL, Occipitonasal length ; PL, Palatal length ; ZW, Zygomatic width.